

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

In the Claims:

Claims 1 and 8 have been amended to read as follows:

Sub 13 1(Amended). A gate valve for controlling the flow of fluid through a component having a fluid flow passage that includes at least a first branch and a second branch, the gate valve comprising:

- a gate cavity which communicates with both the first branch and the second branch;
- a gate which is movably positioned in the gate cavity and which includes a first flow port that is connected to a second flow port; and
- means for actuating the gate between an open position, in which the first flow port is aligned with the first branch and the second flow port is in communication with the ^{upper} second branch, and a closed position, in which the first flow port is offset from the first branch;

wherein the gate further comprises a generally flat face which is adapted to seal the first branch from the gate cavity when the gate is in the closed position to thereby prevent the fluid from flowing between the first branch and the gate cavity.

A14 8(Amended). In combination with a tubing hanger which is suspended in a tubing spool and which comprises an elongated body having an annulus bore that extends generally axially therethrough, the annulus bore comprising at least a first branch and a second branch, a closure member comprising:

• a gate cavity which communicates with both the first branch and the second branch;

• a gate which is movably positioned in the gate cavity and which includes a first flow port that is connected to a second flow port; and

• means for actuating the gate between an open position, in which the first flow port is aligned with the first branch and the second flow port is in communication with the second branch, and a closed position, in which the first flow port is offset from the first branch;

wherein the actuating means is disposed at least partially within a conduit that extends generally axially through the tubing hanger.

Remarks

Reconsideration of the above-identified application is respectfully requested.

The Examiner has objected to the drawings under 37 CFR 1.83(a) as not disclosing every feature of the invention which is specified in the claims. In particular, the Examiner believes that the feature "the second flow port in communication with the second branch" is not shown in the drawings. In this and other objections the Examiner has raised to the description and the claims, the Examiner believes that the use of the terms "first", "second", "third" and "fourth" to refer to the branches of the annulus bore 36 is inconsistent with the use of the same terms in the claims.

Accordingly, the description has been amended to employ different designations for the branches of the annulus bore 36. With respect to the

embodiments illustrated in Figures 2, 3A and 3B, the description has been amended to refer to the branches of the annulus bore 36 as the “lower lateral” branch (54), the “lower axial” branch (56), the “upper lateral” branch (58) and the “upper axial” branch (60). Similarly, with respect to the embodiment illustrated in Figure 4, the description has been amended to refer to the branches of the annulus bore 36 as the “lateral” branch (112), the “lower axial” branch (114) and the “upper axial” branch (116).

In light of these amendments to the description, applicant submits that the feature “the second flow port in communication with the second branch” is clearly shown in the drawings. With respect to the embodiment of the invention shown in Figure 3A, the “first branch” and the “second branch” may be, for example, the lower lateral branch 54 and the upper axial branch 60, respectively. In this context, the second flow port 76 in the gate 68 is clearly in communication with the “second branch” 60 when the gate valve 10 is in the open position. With respect to the embodiment of the invention shown in Figure 4, the “first branch” and the “second branch” may be, for example, the lateral branch 112 and the upper axial branch 116, respectively. In such a scenario, the second flow port 124 in the gate 118 is obviously in communication with the “second branch” 116 when the gate valve 110 is in the open position. Therefore, applicant submits that the drawings do not require correction to show “the second flow port in communication with the second branch.”

The Examiner has requested that applicant correct the specification for any errors of which applicant is aware, including the apparent inconsistency

surrounding the use of the terms “first”, “second”, “third” and “fourth” to refer to the branches of the annulus bore 36. As discussed above, the specification has been amended to eliminate the apparent confusion resulting from the use of these terms. In addition, the specification has been thoroughly reviewed to discover any additional areas that may require clarification or correction and has been amended where necessary.

The Examiner has also objected to the specification as not providing antecedent bases for the claim terms “actuating means for moving”, “means for conveying hydraulic pressure”, “means for moving the gate in a second direction” and “mechanical biasing means”. However, applicant submits that these terms are clearly supported by the description. For example, claims 1 and 8 have been amended to change “actuating means for moving” to “means for actuating”, and such means would readily be understood by the person of ordinary skill in the art to include the actuating mechanism 70 which is described beginning on line 10 of page 8. Similarly, the “means for conveying hydraulic pressure” would be understood to include the conduit 38 and the coupling 38 which are described beginning on line 11 of page 10, the “means for moving the gate in a second direction” would be understood to include the return biasing mechanism 84 which is described beginning on line 20 of page 8, and the “mechanical biasing means” would be understood to include the spring 88 which is illustrated in Figures 3A and 3B. Therefore, applicant submits that the specification need not be corrected in this regard.

Claims 1-15 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Examiner believes that the use of the terms "first", "second" and "third" to refer to the branches of the annulus bore 36 makes the claims vague and indefinite. In addition, the Examiner believes that the terms "actuating means for moving", "means for conveying hydraulic pressure", "means for moving the gate in a second direction" and "mechanical biasing means" do not appear in the specification and therefore make the claims vague and indefinite. Furthermore, the Examiner believes that the preamble to claim 8 does not appear to be commensurate in scope with the bodies of claims 8-15. Finally, the Examiner is confused over the reference to the seals in claim 15.

Regarding the use of the terms "first", "second", and "third" to refer to the branches of the annulus bore 36, the specification has been amended to replace these terms with different terms. Thus, the apparent inconsistency between the description and the claims arising from the use of these terms has been eliminated. Therefore, applicant submits that the claims are no longer indefinite due to their use of the terms "first", "second" and "third" to refer to the branches of the annulus bore.

Regarding the use of the claim terms "actuating means for moving", "means for conveying hydraulic pressure", "means for moving the gate in a second direction" and "mechanical biasing means", applicant maintains that these terms are clearly supported by the description, as discussed above.

Therefore, applicant submits that the use of these terms does not render the claims indefinite.

Regarding claim 8, this claim has been amended to place it in Jepson format. Consequently, claim 8 is now directed to the entire tubing hanger. Therefore, applicant submits that claim 8 and its dependent claims 9-15 are allowable under 35 U.S.C. 112, second paragraph.

Regarding the seals which are recited in claim 15, these are the seals 46 and 50 which seal between the tubing hanger 20 and the tubing spool 16 (see Figure 1). As described beginning on line 13 of page 9, in one embodiment of the invention the gate cavity 62 extends into the body of the tubing hanger 20 from an opening 92 which is formed in the wall 24. Thus, the gate cavity 62 communicates directly with the annular area bounded by the seals 46 and 50. In this embodiment, therefore, the pressure within the gate cavity 62 is contained by the seals 46 and 50. Therefore, applicant submits that claim 15 is allowable under 35 U.S.C. 112, second paragraph.

Claims 1-5, 7-12, 14 and 15 stand rejected under 35 U.S.C. 102(b) as being anticipated by Schreuder (U.S. Patent No. 396,239). However, independent claims 1 and 8, on which the remaining rejected claims depend, have been amended to more clearly distinguish applicant's invention from this patent.

Claim 1 has been amended to require that the gate include a generally flat face which is adapted to seal the first branch from the gate cavity when the gate is in the closed position to thereby prevent the fluid from flowing between the first

branch and the gate cavity. This feature is not disclosed in Schreuder. Rather, in Schreuder the gate 3 comprises a port 14 that is adapted to register with the supply ports 8 and 9 when the gate is midway in its stroke, and a port 13 that is adapted to connect one or the other of the supply ports 8, 9 with an exhaust port 7 when the gate is at the corresponding ends of its stroke. In addition, Schreuder does not suggest that the gate 3 can be used to seal either of the supply ports 8, 9 from the cavity in which the gate is disposed. Therefore, claim 1 and its dependent claims 2-5 and 7 are not anticipated by Schreuder.

Claim 8 has been amended to recite a combined tubing hanger and gate valve structure. In addition, claim 8 now requires that the actuating means for the gate valve be disposed at least partially within a conduit that extends generally axially through the tubing hanger. Schreuder is directed to a fluid pressure engine, not a tubing hanger. Therefore, claim 8 and its dependent claims 9-12, 14 and 15 are not anticipated by Schreuder.

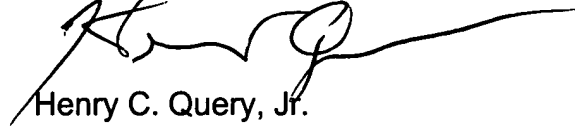
Claims 5, 6, 12 and 13 stand rejected under 35 U.S.C. 103(a) as being obvious over Schreuder in view of Smith (U.S. Patent No. 3,104,659). However, to the extent this rejection is based on the Examiner's belief that independent claims 1 and 8 are anticipated by Schreuder, claims 5, 6, 12 and 13 are patentable over any permissible combination of Smith and Schreuder for the reasons stated above with respect to claims 1 and 8.

The prior art made of record but not relied upon has been considered but is not believed to be pertinent to the patentability of the present invention.

In light of the foregoing, claims 1-15 are submitted as allowable.

Favorable action is solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "H. C. Query, Jr.", with a long horizontal flourish extending to the right.

Henry C. Query, Jr.
Reg. No. 35,650
(630) 260-8093

Date: November 13, 2002

Claim Amendments

Please amend claims 1 and 8 as follows:

1(Amended). A gate valve for controlling the flow of fluid through a component having a fluid flow passage that includes at least a first branch and a second branch, the gate valve comprising:

a gate cavity which communicates with both the first branch and the second branch;

a gate which is movably positioned in the gate cavity and which includes a first flow port that is connected to a second flow port; and

[actuating] means for [moving] actuating the gate between an open position, in which the first flow port is aligned with the first branch and the second flow port is in communication with the second branch, and a closed position, in which the first flow port is offset from the first branch;

[wherein the second flow port is divergent from the first flow port;]

[whereby when the gate is in the open position, the direction of the flow of fluid through the gate valve is changed by the first and second flow ports]

wherein the gate further comprises a generally flat face which is adapted to seal the first branch from the gate cavity when the gate is in the closed position to thereby prevent the fluid from flowing between the first branch and the gate cavity.

8(Amended). [A closure member for use in] In combination with a tubing hanger which is suspended in a tubing spool and which comprises an elongated body having an annulus bore that extends generally axially

therethrough, the annulus bore comprising at least a first branch and a second branch, [the] a closure member comprising:

a gate cavity which communicates with both the first branch and the second branch;

a gate which is movably positioned in the gate cavity and which includes a first flow port that is connected to a second flow port; and

[actuating] means for [moving] actuating the gate between an open position, in which the first flow port is aligned with the first branch and the second flow port is in communication with the second branch, and a closed position, in which the first flow port is offset from the first branch;

[wherein the second flow port is divergent from the first flow port;]

[whereby when the gate is in the open position, the direction of the flow of fluid through the closure member is changed by the first and second flow ports]

wherein the actuating means is disposed at least partially within a conduit that extends generally axially through the tubing hanger.